

AMENDMENTS TO THE CLAIMS

Claim 1-54 were initially pending.

Please amend claims 1, 10, and 40-42.

Please cancel claims 13, 27-39, and 48-50 without prejudice.

Accordingly, claims 1-12, 14-26, 40-47, and 51-54 remain pending.

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (Presently amended) One or more computer-readable media having stored thereon a plurality of instructions that, when executed by one or more processors of a computer, causes the one or more processors to perform the following acts:

receiving search criteria;

generating a query vector based on text features of the search criteria;

identifying non-text media content pieces to be rendered by:

classifying the one or more of non-text media content as meaningful or not meaningful such that if a piece of the non-text media is an image, the image is determined to be meaningful as a function of one or more of a color histogram, size, and image semantics; and

comparing the query vector to text feature vectors associated with a plurality of the media content pieces;

receiving user feedback regarding the relevancy of the identified media content pieces;

modifying the query vector based on the user feedback;

1 modifying one or more of the text feature vectors associated with the
2 plurality of media content pieces based on the user feedback; and

3 identifying new media content pieces to be rendered by comparing the
4 modified query vector to the text feature vectors, including the one or more
5 modified text feature vectors, associated with the plurality of media content
6 pieces.

7
8 2. (Original) One or more computer readable media as recited in claim
9 1, further comprising:

10 generating another query vector based on one or more low-level features of
11 the search criteria; and

12 wherein the identifying comprises,
13 comparing the query vector to text feature vectors associated with the
14 plurality of media content pieces to generate first results,

15 comparing the other query vector to other low-level feature vectors
16 associated with the plurality of media content pieces to generate second results,
17 and

18 combining, for one of the plurality of media content pieces, the first and
19 second results corresponding to the one media content piece.

20
21 3. (Original) One or more computer readable media as recited in claim
22 2, further comprising altering, based on the user feedback, a weighting of the
23 results used in the combining.

1 4. (Original) One or more computer readable media as recited in claim
2 3, wherein the altering comprises:

3 determining, for the one of the plurality of media content pieces, whether
4 the first result corresponding to the one media content piece is greater than the
5 second result corresponding to the one media content piece; and

6 weighting the first result corresponding to the one media content piece
7 more heavily if the first result corresponding to the one media content piece is less
8 than the second result corresponding to the one media content piece, and otherwise
9 weighting the second result corresponding to the one media content piece more
10 heavily.

11
12 5. (Original) One or more computer readable media as recited in claim
13 1, wherein modifying one or more of the text feature vectors associated with the
14 plurality of media content pieces based on the user feedback comprises altering a
15 weighting of one or more elements in the feature vector based on the user
16 feedback.

17
18 6. (Original) One or more computer readable media as recited in claim
19 1, wherein the search criteria comprises one or more words.

20
21 7. (Original) One or more computer readable media as recited in claim
22 1, wherein the piece of media content comprises an image.

23
24 8. (Original) One or more computer readable media as recited in claim
25 1, wherein the piece of media content comprises a portion of audio content.

1
2 9. (Original) One or more computer readable media as recited in claim
3 1, wherein the piece of media content comprises a portion of multimedia content.

4
5 10. (Presently amended) A method comprising:
6 identifying a media content source;
7 collecting one or more pieces of non-text media content and associated text
8 from the media content source;
9 classifying the one or more of non-text media content as meaningful or not
10 meaningful such that if a piece of the non-text media is an image, the image is
11 determined to be meaningful as a function of one or more of a color histogram,
12 size, and image semantics;
13 extracting, for a piece of non-text media content classified as being
14 meaningful, one or more text features from the associated text; and
15 making the one or more text features available for searching.

16
17 11. (Original) A method as recited in claim 10, further comprising:
18 generating one or more text feature vectors from the extracted one or more
19 text features; and
20 wherein the making comprises making the one or more text feature vectors
21 available for searching.

22
23 12. (Original) A method as recited in claim 10, further comprising:
24 extracting one or more low-level features from the media content piece; and
25 making the one or more low-level features available for searching.

1
2 13. (Canceled)

3
4 14. (Original) A method as recited in claim 10, wherein the media
5 content source comprises a web site including a plurality of web pages, each web
6 page including a plurality of pieces of media content and text associated with one
7 or more of the plurality of pieces of media content.

8
9 15. (Original) A method as recited in claim 10, wherein the associated
10 text for a piece of media content comprises a filename and the one or more text
11 features comprises one or more words in the filename.

12
13 16. (Original) A method as recited in claim 10, wherein the associated
14 text for a piece of media content comprises a uniform resource locator (URL) and
15 the one or more text features comprises one or more words in the URL.

16
17 17. (Original) A method as recited in claim 10, wherein the associated
18 text for a piece of media content comprises alternate text that can be displayed in
19 place of the media content, and the one or more text features comprises one or
20 more words of the alternate text.

21
22 18. (Original) A method as recited in claim 10, wherein the associated
23 text for a piece of media content comprises text surrounding the piece of media
24 content on a web page, and the one or more text features comprises one or more
25 words of the text surrounding the piece of media content.

1
2 19. (Original) A method as recited in claim 10, wherein the associated
3 text for a piece of media content comprises a title of a web page that includes the
4 piece of media content, and the one or more text features comprises one or more
5 words in the title.

6
7 20. (Original) A method as recited in claim 10, wherein the associated
8 text for a piece of media content comprises a link on a web page that includes the
9 piece of media content, and the one or more text features comprises one or more
10 words in the link.

11
12 21. (Original) A method as recited in claim 10, wherein the associated
13 text for a piece of media content comprises anchor text corresponding to the piece
14 of media content, and the one or more text features comprises one or more words
15 in the anchor text.

16
17 22. (Original) A method as recited in claim 10, wherein the associated
18 text for a piece of media content comprises an image annotation corresponding to
19 the piece of media content, and the one or more text features comprises one or
20 more words in the image annotation.

21
22 23. (Original) A method as recited in claim 10, wherein each of the one
23 or more pieces of media content comprises an image.
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1 24. (Original) A method as recited in claim 10, wherein each of the one
2 or more pieces of media content comprises a piece of audio content.

3
4 25. (Original) A method as recited in claim 10, wherein each of the one
5 or more pieces of media content comprises a piece of multimedia content.

6
7 26. (Original) One or more computer-readable memories containing a
8 computer program that is executable by a processor to perform the method recited
9 in claim 10.

10
11 27 through 39 (Canceled).

12
13 40. (Presently amended) A system comprising:
14 a crawler module coupled to access a media content source and collect a
15 plurality of media content pieces ~~and associated text~~ from the media content
16 source, the media content pieces comprising text and one or more different types
17 of media content that are not text;

18 a classifier module coupled to classify the one or more different types as
19 meaningful or not meaningful such that if a piece of the one or more different
20 types is an image, the image is determined to be meaningful as a function of one
21 or more of a color histogram, size, and image semantics;

22 a feature extraction module coupled to extract, for a piece of the one or
23 more different types and from the one or more of the media content pieces and as a
24 function of whether text is determined to be meaningful, text comprising one or
25

1 ~~more keywords associated with the piece~~~~one or more text features from one of the~~
2 ~~media content pieces; and~~

3 a media content indexing module coupled to generate, for the piece, a text
4 feature vector, ~~based on the extracted one or more text features, corresponding to~~
5 ~~the one media content piece~~ identifying, for each keyword of the keywords, a first
6 frequency that the keyword is used in the text, and a second frequency indicating
7 frequency that the keyword is used with respect to any other ones of the one or
8 more different types of media content.

9
10 41. (Presently amended) A system comprising:

11 a query generator to generate a query vector based on received search
12 criteria; and

13 a matching module coupled to,

14 receive the query vector and compare the query vector to a plurality
15 of feature vectors corresponding to a plurality of pieces of media content, wherein
16 each of the plurality of feature vectors has been generated based on text associated
17 with one of the plurality of pieces of media content and an indication that the one
18 was classified as meaningful as a function of one or more of a color histogram,
19 size, and image semantics; and

20 identify one or more of the plurality of pieces of media content to
21 return for rendering to a user based on the comparison of the query vector to the
22 plurality of feature vectors.

23
24 42. (Presently amended) A method comprising:

25 receiving search criteria;

1 identifying, based at least in part on the search criteria, a piece of media
2 content to be rendered;

3 receiving, after rendering of the piece of media content, user feedback
4 regarding ~~the~~ relevancy of the ~~rendered~~ piece of media content;

5 weighting for another piece of media content, based on the user feedback,
6 both a result of comparing ~~the~~ a high-level query vector to a high-level feature
7 vector of the other piece of media content and a result of comparing ~~the~~ a low-
8 level query vector to a low-level feature vector of the other piece of media content;
9 and

10 combining the weighted result to determine whether to identify the other
11 piece of media content for rendering.

12
13 43. (Original) A method as recited in claim 42, further comprising
14 generating a new high-level query vector and a new low-level query vector based
15 at least in part on the search criteria.

16
17 44. (Original) A method as recited in claim 42, further comprising:
18 generating a user space vector corresponding to the piece of media content;
19 and
20 using the user space vector corresponding to the piece of media content to
21 modify the high-level feature vector corresponding to the piece of media content.

22
23 45. (Original) A method as recited in claim 42, further comprising
24 altering a weighting of one or more elements in the feature vector based on the
25 user feedback.

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2 46. (Original) A method as recited in claim 42, wherein the high-level
3 feature vector of the other piece of media content is a text feature vector.
4

5 47. (Original) One or more computer-readable memories containing a
6 computer program that is executable by a processor to perform the method recited
7 in claim 42.
8

9 48 – 50 (Canceled)
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11 51. (Original) One or more computer-readable media having stored
12 thereon a plurality of instructions that, when executed by one or more processors
13 of a computer, causes the one or more processors to perform acts including:

14 identifying a piece of media content to render to a user based at least in part
15 on comparing a query vector corresponding to search criteria of the user and a
16 feature vector corresponding to the piece of media content;

17 receiving user feedback regarding the relevancy of the piece of media
18 content;

19 modifying the query vector based on the received user feedback; and

20 modifying the feature vector based on the received user feedback in an off-
21 line log mining process.
22

23 52. (Original) One or more computer-readable media as recited in claim
24 51 wherein modifying the query vector comprises generating a vector U based on
25

1 pieces of media content identified as relevant in the user feedback, and generating
2 a new query vector D_{new} according to the following:

$$3 \quad D_{new} = \eta U + (1 - \eta)D$$

4 where η represents a confidence in the vector U .

5
6 53. (Original) One or more computer-readable media as recited in claim
7 52, wherein modifying the query vector comprises generating a vector V based on
8 pieces of media content identified as irrelevant in the user feedback, and
9 generating a new query vector D_{final} according to the following:

$$10 \quad D_{final} = D_{new} * (1 - V)$$

11
12 54. (Original) One or more computer-readable media as recited in claim
13 51, wherein the piece of media content comprises one of: audio content, visual
14 content, and multimedia content.
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